

## IT IS CLAIMED:

1. Components for constructing a fluid manifold having a plurality of separate fluid-flow pathways, where the manifold is designed to be carried on a support, and to hold a plurality of fluid components in fluid communication with said pathways, said components comprising:

a plurality of pipe modules which form said fluid-flow pathways and which each includes an elongate pipe section and two or more connectors, each connector having a proximal end section joined in fluid communication with the elongate pipe section and a distal end section terminating at a flange;

a plurality of block modules which can be joined together in various configurations with said pipe modules to form the fluid manifold, where each block module provides:

(i) at least one groove formed in the block module, such that confronting grooves in two block modules, when the modules are joined together, form an opening for receiving at least a portion of the connector in the pipe module, wherein the pipe module is supported in the joined block modules by its flange,

(ii) structure for holding joined block modules in alignment with each other, wherein block modules can be removed and replaced without removal of adjacent block or pipe modules; and

(iii) structure for mounting said fluid components on said joined blocks, and for mounting said joined blocks on said support.

2. The components of claim 1, wherein said pipe modules are formed of a high-grade, non-corrosive material.

3. The components of claim 2, wherein said pipe modules are formed of a material selected from the group consisting of 304 stainless steel, 316L VIM-VAR, Hastelloy<sup>TM</sup>, aluminum, and ceramic.

4. The components of claim 1, wherein said block modules are formed of a material selected from the group consisting of stainless steel and aluminum.

5. The components of claim 1, wherein the distal end section of at least one connector includes a Microfit™ fitting joining the connector to the elongate pipe section.

5           6. The components of claim 1, wherein the distal end section of at least one of said connectors includes an elbow fitting joining the connector to the elongate pipe section.

7. The components of claim 1, where at least one of said plurality of pipe  
10 modules further includes at least one tee fitting.

8. The components of claim 1, wherein said structure for holding the joined block modules comprises one or more alignment pins and one or more complimentary cavities for receiving the alignment pins.  
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9. The components of claim 1, wherein said structure for mounting said fluid components on said joined blocks is separate from the structure for mounting said joined blocks on said support, such that mounting a fluid component to a block can be performed independently of mounting a joined  
20 block to the support.

10. The components of claim 9, wherein said structure for mounting said joined blocks on said support includes one or more slots formed in side regions of said blocks, said each slot being adapted to receive a portion of a washer  
25 therein.

11. A modular fluid manifold having a plurality of separate fluid-flow pathways, said manifold being designed to be carried on a support, and to hold a plurality of fluid components in fluid communication with said pathways, said  
30 manifold comprising:

a plurality of pipe modules which form said fluid-flow pathways and which each includes an elongate pipe section and two or more connectors, each

connector having a proximal end section joined in fluid communication with the elongate pipe section and a distal end section terminating at a flange;

a plurality of block modules which are joined together in one of a plurality of possible configurations with said pipe modules to form the fluid manifold,

5 where each block module provides:

(i) at least one groove formed in the block module, such that the confronting grooves in two block modules, when the modules are joined together, form an opening for receiving at least a portion of the connector section of the pipe module, wherein the pipe module is supported in the joined

10 block modules by its flange,

(ii) structure for holding joined block modules in alignment with each other, wherein block modules can be removed and replaced without removal of adjacent block or pipe modules; and

(iii) structure for mounting said fluid components on said joined blocks,  
15 and for mounting said joined blocks on said support.

12. The fluid manifold of claim 11, wherein said pipe modules are formed of a high-grade, non-corrosive material.

20 13. The fluid manifolds of claim 12, wherein said plurality of pipe modules are formed of a material selected from the group consisting of 304 stainless steel, 316L VIM-VAR, Hastelloy<sup>TM</sup>, aluminum, and ceramic.

14. The fluid manifold of claim 11, wherein said plurality of block  
25 modules are formed of a material selected from the group consisting of stainless steel and aluminum.

15. The fluid manifold of claim 11, wherein the distal end section of at least one connectors includes a Microfit<sup>TM</sup> fitting joining the connector to the  
30 elongate pipe section.

16. The components of claim 11, wherein the distal end section of at

least one of said connectors includes an elbow fitting joining the connector to the elongate pipe section.

17. The fluid manifold of claim 11, where at least one of said plurality of  
5 pipe modules further includes at least one tee fitting.

18. The fluid manifold of claim 11, wherein said structure for holding the  
joined block modules comprises one or more alignment pins and one or more  
complimentary cavities for receiving the alignment pins.

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19. The fluid manifold of claim 11, wherein at least a portion of the joined  
block modules overlap one another and said structure for holding the joined  
block modules comprises one or more fasteners for securing the modules.

15 20. The fluid manifold of claim 11 wherein said structure for mounting  
said fluid components on said joined blocks is separate from the structure for  
mounting said joined blocks on said support, such that mounting a fluid  
component to a block can be performed independently of mounting a joined  
block to the support.

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21. The fluid manifold of claim 20, wherein said structure for mounting  
said joined blocks on said support includes one or more slots formed in side  
regions of said blocks, said each slot being adapted to receive a portion of a  
washer therein.

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